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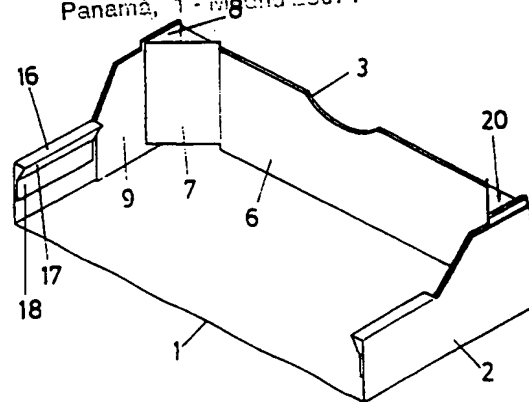
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(54) **CARDBOARD PACKAGING**

(57) The cardboard packaging is configured from a die-cut base sheet having shrouds and head panels with side flaps. It is characterized by the incorporation of both reinforcement head panels (5) which are independent from the base sheet (1) and which are backed to the head panels (3) of the box. The reinforcement head panels (5) are comprised of a central sheet (6) delimited at its sides by three folding lines which define two sectors, the interior sector (7) and the exterior sector (8) and flaps (9). The internal sector (7) and the external sector (8) configure in the trussing of the reinforcement front panel (5) a prismatic portion which provides for the resistance to stacking. Supports or reinforcement columns (19) are optionally provided, which match in length with the height of the cavities (20) of the prismatic portions.

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FIG. 3



EP 0 785 136 A1

Description

OBJECT OF THE INVENTION

The present invention relates to a cardboard container for the transport and storage of products that is designed to provide a consistent and reinforced structure, particularly in its side walls, which contemplate the inclusion of a reinforcement side wall that is independent from the initial box configurating sheet, said reinforcement side wall having prismatic extensions correspondingly located in the box corners to enhance the piling up strength.

The box is fitted with ventilation holes for the products contained and internal folds in the edges of the front walls which facilitate its handling.

Independent reinforcement supports are also provided, located in the inner hollow space of the prismatic extensions, designed to improve piling up conditions under special circumstances.

BACKGROUND OF THE INVENTION

Cardboard boxes are known from several embodiments which contemplate their construction starting from a stamped sheet mainly comprising the rectangular base, the front walls or larger sides and the side walls or shorter sides, with longitudinal or lateral extensions of these sides being provided in certain cases in order to define boxes with different shapes.

Boxes are frequently used which have double side walls made up of the side reinforcement wall itself and its longitudinal extension which also extends upwards and which, once conveniently folded inwards, defines said double wall and guarantees the reinforcement of this sector, said longitudinal extension generally being provided with side laps located adjacent the side face, thereby facilitating assembly.

In the present case, certain embodiments are contemplated wherein the longitudinal laps may be divided into several sectors which, once conveniently folded, constitute corner reinforcements which allow for improved piling up conditions for the boxes. The folding of these longitudinal extension corner sectors and their attachment to the rest of the box normally involves a certain complexity.

On the other hand, for specific box dimensions, certain problems arise during the manufacturing process as a result of the limitations imposed by the cardboard box plasticizing stage.

Obtaining a cardboard box which solves the above problems by incorporating reinforcement side walls which have previously been formed independently from the cardboard sheet, of a size and shape adapted to the container itself, makes the invention proposed hereunder feasible.

DESCRIPTION OF THE INVENTION

The container which is the object of the invention is composed of a stamped sheet provided with several folding lines which define the front or larger walls and the side or shorter walls, and corresponding independent reinforcement side walls adhered to the side walls after assembly in a manner that they become perfectly integrated to the overall container, said reinforcement side walls being provided with prismatic portions which enhance the piling up strength of the box.

The container side wall extends laterally to form respective side laps which fold and adhere onto the inner face of the side, each lap being provided with an oblique cut in its vertex which defines an edge that coincides with the slanting edge of the oblique cut in the lateral face when assembled.

The reinforcement side wall is made up of a central sheet with three folding lines along each of its sides which define two sectors, i.e. an inner and an outer sector, the upper edges of which are slightly raised in respect to the edge of the central sheet and from whose external sector subsequently extend corresponding lateral laps which reveal a slight staggering along their upper edge, which laps extend on a lower level up to the oblique zone corresponding to the vertex.

Both these sectors, that is, the inner and outer sector, fold inwards to define prismatic reinforcement portions which enhance the piling up strength. This preformed configuration serves as the basis for performing the subsequent folds of the reinforcement side wall, until it is fitted in the box, so that the inner sector is positioned transversely in the corner and the outer sector is adhered to the raised zone in the lateral lap of the reinforcement side wall itself.

When assembling the reinforcement side wall over the side wall, the central sheet of the former is adhered over the latter, the prismatic portions projecting upwards in respect to the upper edge of the side wall, the reinforcement side wall lateral laps adhering over the inner face of the side wall lateral laps and the vertical lateral edge of the reinforcement side wall lap abutting in this position against the folded sector of the front wall.

The front sides present respective cuts in the shape of an equilateral triangle between whose vertices extends a folding line, parallel to which, and running outwards, run two other folding lines which define three sectors, the first of which, located between the innermost folding lines, constitutes the upper lateral edge of the box being assembled; the second sector is likewise slantingly folded inwards; and the third sector is adhered to the front wall, thus forming side holding means that can be easily grasped and enable the box to be held and/or transported.

The base sheet presents triangular cuts in each corner which coincide with the position of the prismatic portions and are designed to facilitate the piling up of the boxes, and furthermore incorporates openings shaped as a rhombus in the line separating the front

wall from the base sheet which allow for the ventilation of the products contained in the box.

The side walls, as well as the reinforcement side walls, contain partially circular central cutouts along their upper edge which allow the box to be handled with ease.

Reinforcement supports, preferably made of plastic, are incorporated for special piling up requirements which comprise triangular columns incorporated to the hollow space defined inside the prismatic portions of the corners. These reinforcement supports extend between the upper and lower edges of the box and are shaped in a manner that an ample upper sector of a constant hollow triangular section is provided which constitutes the female portion and receives the reinforcement support of the box piled above it, and another lower, compact and likewise triangular sector of a smaller surface which acts as the male portion.

DESCRIPTION OF THE DRAWINGS

In order to complement the description set forth and help toward a better understanding of the characteristics of the invention, a set of drawings is attached to this specification, being an integral part thereof, wherein the following is illustrated with a non-limiting character:

Figure 1 shows the various reinforcement side wall folding stages.

Figure 2 shows a plan view of the base sheet on which the reinforcement side walls are to be mounted.

Figure 3 shows a detailed view of a sector of the box whereon the reinforcement side walls are already mounted.

Figure 4 shows a detailed view of the reinforcement support incorporated to the inner hollow space of the prismatic portions.

PREFERRED EMBODIMENT OF THE INVENTION

In the light of these figures, it is apparent that the cardboard container which is the object of the invention is formed from a stamped base sheet (1) which presents front walls (2) and side walls (3) with lateral laps (4) and respective reinforcement side walls (5) independent from the base sheet (1) which are located adjacent the side walls (3) of the box, the reinforcement side walls (5) being composed of a central sheet (6) delimited by three folding lines which define two sectors, namely an inner (7) and an outer (8) sector, said outer sector (8) having laps (9) extending therefrom which present a slight staggering of their upper edge up to a level below that of the oblique cut which corresponds to the vertex, it being foreseen that the inner (7) and outer (8) sectors form, upon assembling the reinforcement side wall (5), a prismatic reinforcement section which enhances the piling up strength, the inner sector (7) being positioned in the corner in an oblique arrange-

ment and the outer sector (8) being adhered to the zone which presents the upper step of the lateral lap (9).

Upon mounting the assembly, the central sheet (6) of the reinforcement side wall (5) is located adjacent the side wall (3), and lap (9) of the reinforcement side wall (5) adheres to the inner face of the lateral lap (4) of side wall (3), the external side of which is attached to the inner face of front wall (2), the prismatic portions formed by sectors (7) and (8) projecting upwards.

The front walls (2) present respective cuts (12) extending inwards from their upper edge and shaped as an equilateral triangle between whose vertices extends a folding line (13) parallel to which two other folding lines (14) and (15) run outwards, thus defining three sectors, the first of which, located between the inner folding lines (13) and (14), constitutes the upper lateral edge (16) of the box; the next sector (17) is likewise slantingly folded inwards; and the following sector (18) is adhered to the inner face of front wall (2).

The base sheet (1) shows triangular cuts (10) in each corner thereof which coincide with the position of the prismatic reinforcement portions and are designed to facilitate the piling up of the boxes.

Furthermore, said sheet presents, along the line separating the front wall (2) from the base, respective openings (11) shaped like a rhombus which allow for the ventilation of the products contained in the box.

Also, it must be pointed out that the side walls (3), coinciding with the reinforcement side walls (5), are provided with partially circular central cutouts (11) along their upper edge which allow the box to be handled with ease.

For special piling up requirements, reinforcement supports or columns (19) are optionally provided which coincide in length with the height of the hollow spaces (20) of the prismatic portions, said supports (19) being shaped to have an ample upper sector (19') of a constant hollow triangular section which constitutes the female portion designed to receive the reinforcement support of the box piled above it, and another lower, compact and likewise triangular sector (19'') with a surface smaller than that of the upper sector, which acts as the male portion.

This description need not be more extensive for the expert on the subject to understand the scope of the invention and the advantages deriving therefrom.

The materials, the shape, the size and the arrangement of the elements are liable to changes provided the essence of the invention is not altered.

The terms used in the description of this specification must always be taken in in their ample, non-limiting context.

Claims

1. A cardboard container of the type formed from a stamped base sheet which presents front walls and side walls with lateral laps, essentially characterized in that it incorporates respective reinforcement

side walls (5) independent from the base sheet (1) located adjacent the side walls (3) of the box, said reinforcement side walls (5) being composed of a central sheet (6) delimited along its sides by three folding lines which define two sectors, namely an inner (7) and an outer (8) sector, the outer sector (8) having laps (9) extending therefrom which present a slight staggering of their upper edge up to a level below that of an oblique cut which corresponds to the vertex, it being foreseen that the inner (7) and outer (8) sectors form, upon assembling the reinforcement side wall (5), a prismatic reinforcement section which enhances the piling up strength, the inner sector (7) being positioned in the corner in an oblique arrangement and the outer sector (8) being adhered to the zone which presents the upper step of the lateral lap (9).

2. The cardboard container according to the preceding claim, characterized in that the central sheet (6) of the reinforcement side wall (5) is located adjacent the side wall (3) and in that the lap (9) of the reinforcement side wall (5) adheres to the inner face of the lateral lap (4) of side wall (3), the outer side of which is in turn attached to the inner face of front wall (2), the prismatic portions formed by sectors (7) and (8) projecting upwards above the upper edge.
3. The cardboard container according to the preceding claims, characterized in that the front walls (2) present respective cuts (12) extending inwards from their upper edge and shaped to form an equilateral triangle between whose vertices extends a folding line (13) parallel to which two other folding lines (14) and (15) run outwards, thus defining three sectors, the first of which, contained between the inner folding lines (13) and (14), constitutes the upper lateral edge (16) of the box; the next sector (17) is likewise slantingly folded inwards; and the following sector (18) is adhered to the inner face of front wall (2), thus providing a means for holding and transporting the container.
4. The cardboard container according to the preceding claims, characterized in that the base sheet (1) comprises triangular cuts (10) in each of the corners thereof which coincide with the position of the prismatic portions for facilitating the piling up of the boxes.
5. The cardboard container according to the preceding claims, characterized in that reinforcement supports or columns (19) are optionally provided which coincide in length with the height of the hollow regions (20) of the prismatic portions, said supports (19) being shaped to have an ample upper sector (19') of a constant hollow triangular section which constitutes the female portion designed to receive

the reinforcement support of the box piled above it, and another lower, compact and triangular sector (19'') with a surface smaller than that of the upper sector, which acts as the male portion.

6. The cardboard container according to claims 1, 2, 3 and 4, characterized in that the side walls (3), coinciding with the reinforcement side walls (5), are provided with partially circular central cutouts (11) along their upper edge which allow the box to be handled with ease.
7. The cardboard container according to claims 1, 2, 3 and 4, characterized in that the sheet presents, along the lines separating the front wall (2) from the base, respective openings (11) in the form of a rhombus which allow for the ventilation of the products contained in the box.

FIG. 1

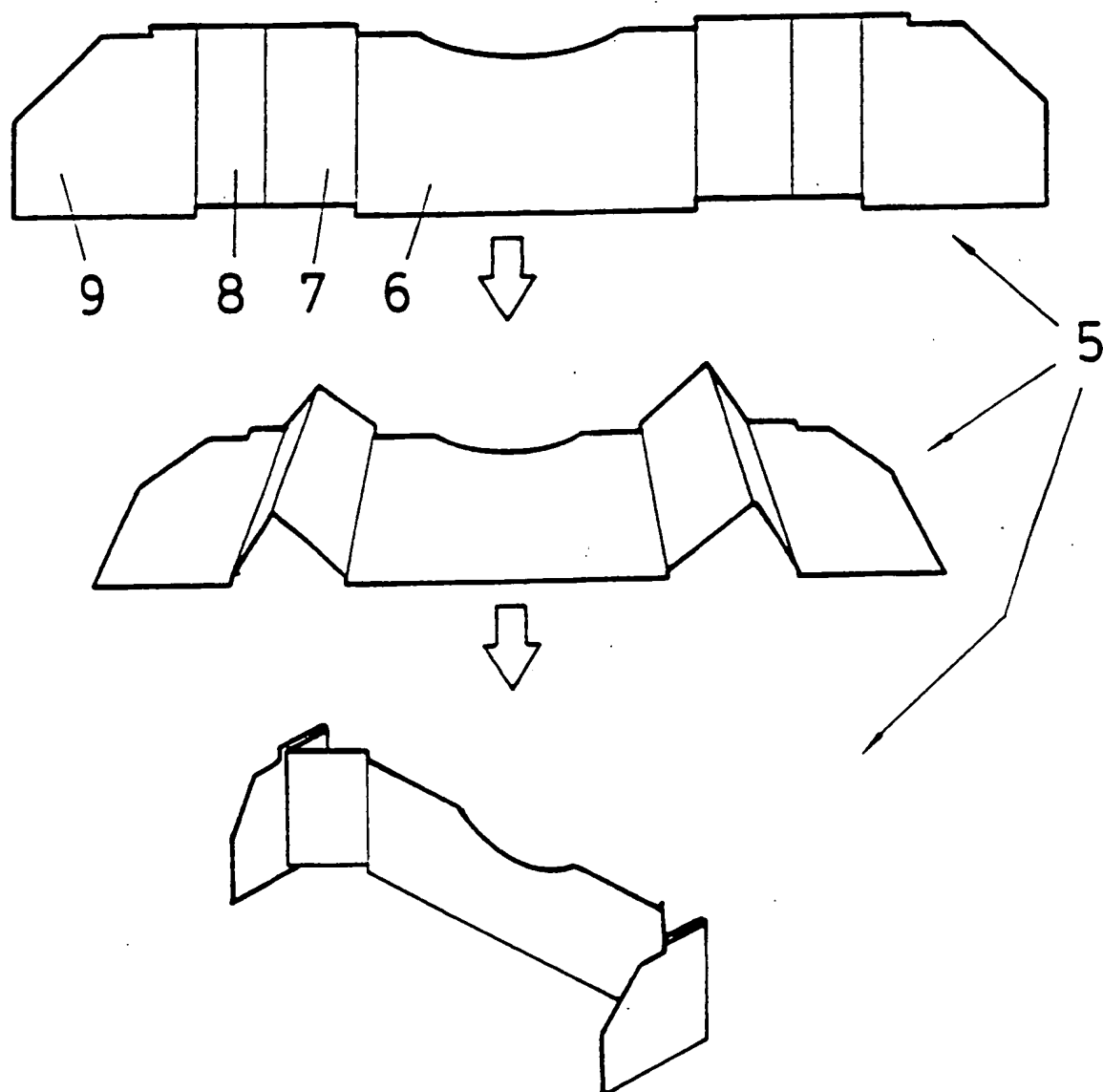


FIG. 2

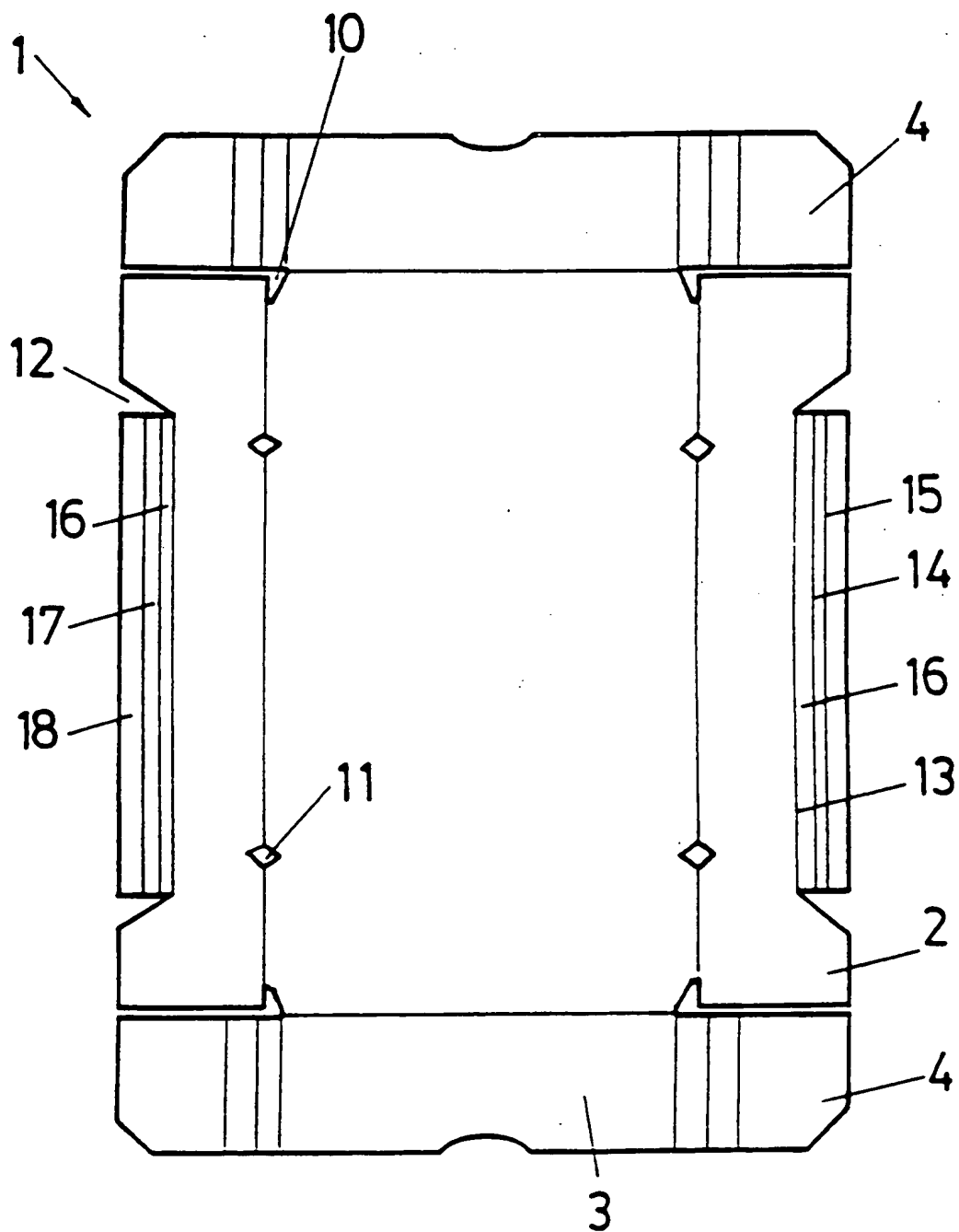


FIG. 3

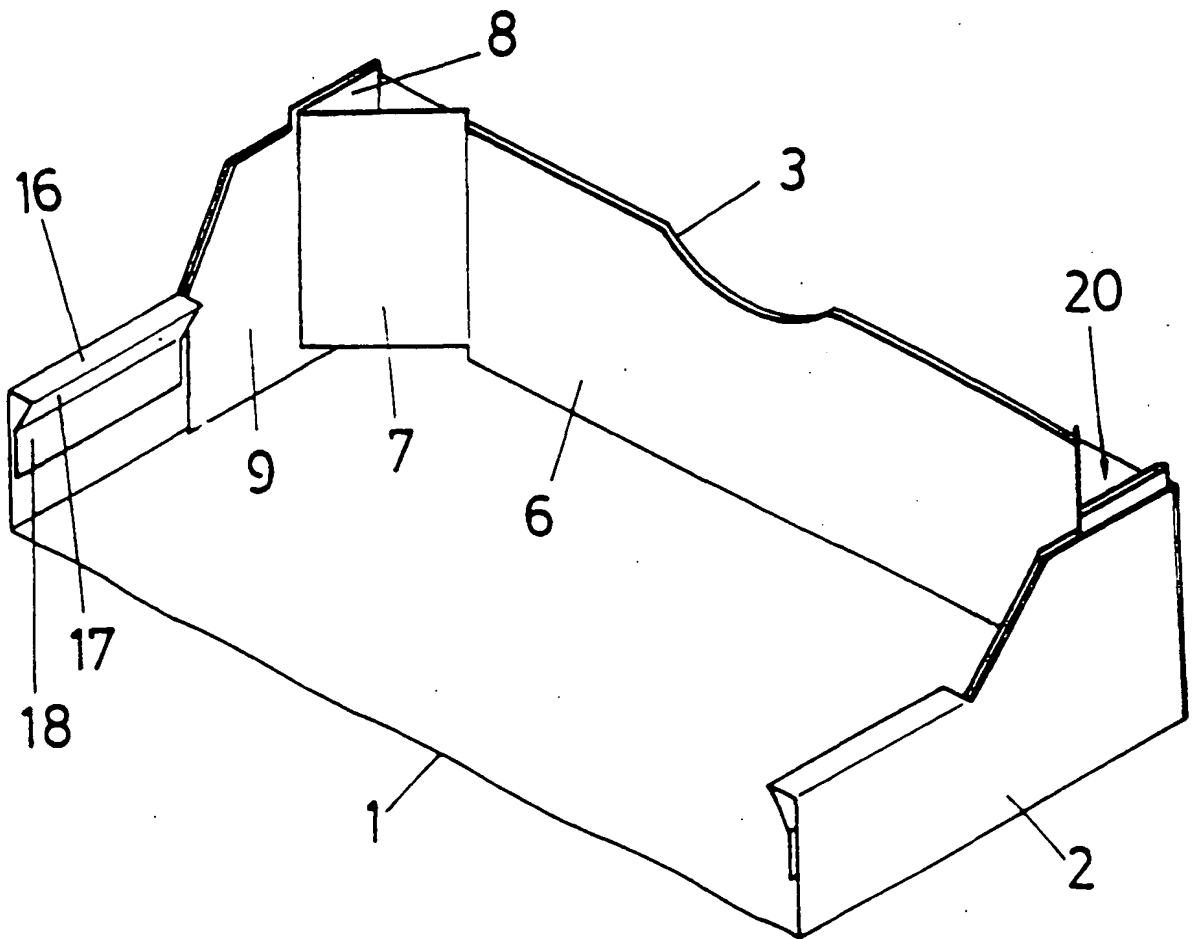
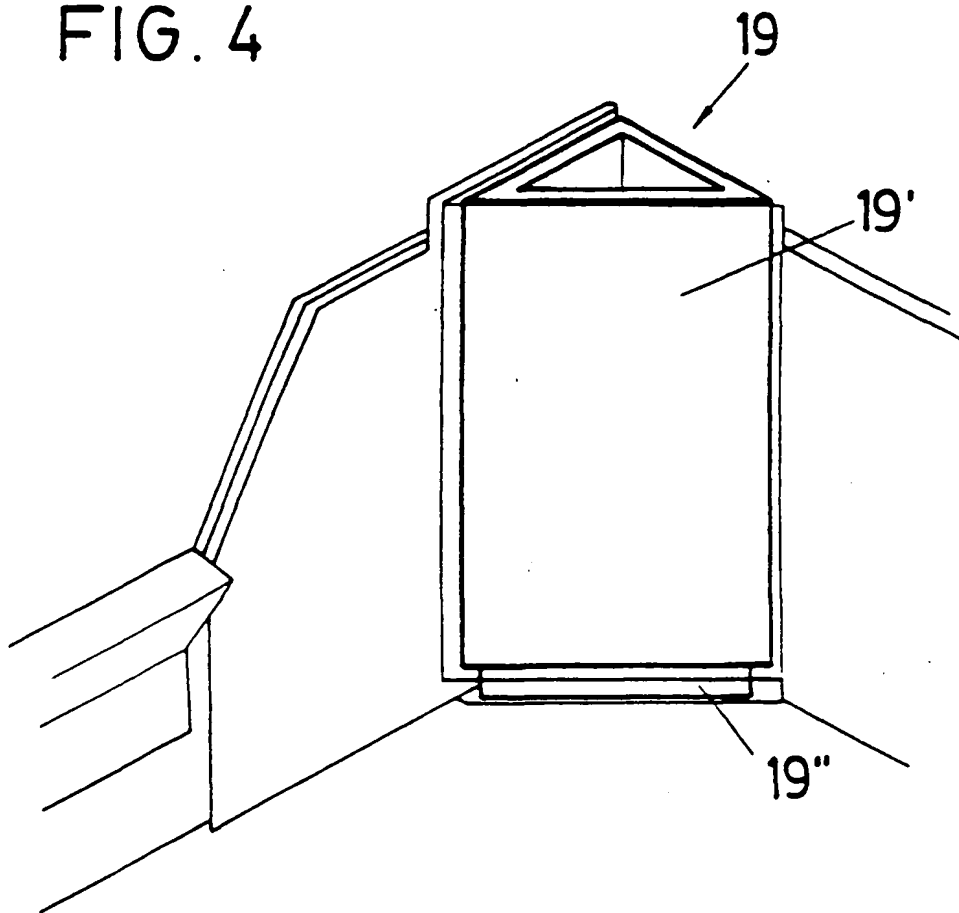


FIG. 4



INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 96/00162

A. CLASSIFICATION OF SUBJECT MATTER		
IPC 6 B65D 5/20, B65D 5/44, B65D 21/032		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC 6 : B65D		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
CIBEPAT, EPODOC, WPIL		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 3614233 A (JANZEN WOLFGANG; KRAUTTER HERMANN) 29 October 1987 (29.10.87) Figures 1-4	1
A	GB 2188036 A (BOIX MAQUINARIA S.A.) 23 September 87 (23.09.87) Figure 3	1,2
A	DE 3729596 A (KRAUTTER HERMANN ; SCHWABISCHE PAPPENFABRIK GMBH) 16 March 89 (16.03.89) Figures 1,2	1
A	GB 2226546 A (BOIX MAQUINARIA S.A.) 4 July 90 (04.07.90) Figures 1-3	1,7
A	EP 0160929 A (OSTHUSHENRICH KG) 13 November 85 (13.11.85) Figure 1	1,5
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
5 December 1996 (05.12.96)		18 December 1996 (18.12.96)
Name and mailing address of the ISA/		Authorized officer
S.P.T.O.		
Facsimile No.		Telephone No.

INTERNATIONAL SEARCH REPORT

International application No
PCT/ES 96/00162

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	FR 2609965 A (NICOLLET HUGUES S.A.) 29 July 88 (29.07.88) Figures 1,3,8,9	1
A	ES 1024806 U (SAECO) 16 October 93 (16.10.93) Figures 1,2	1,6,7